

Description

POP-UP PET CARRIER

BACKGROUND OF INVENTION

1. FIELD OF THE INVENTION

[0001] The present invention is broadly concerned with collapsible pet carriers for domesticated pets such as cats and dogs, whereby a pet owner may transport the carrier in a convenient collapsed condition, but can readily extend the carrier as needed in order to provide a temporary shelter and carrier for a pet. More particularly, the invention is concerned with such pet carriers preferably including a substantially rigid base with an attached pop-up frame and flexible cover, and wherein the frame is capable of pop-up self-erection to its extended use position when the frame is unrestrained without any manual manipulation or other intervention, because of the resilience, flexibility and shape memory characteristics of the frame material. An additional preferred aspect of the invention involves use of a top which mates with the base to form a

carrier housing which restrains the frame in its collapsed condition; moreover, during use of the carrier the top may be attached to the base.

2. DESCRIPTION OF THE PRIOR ART

[0002] Pet owners have traditionally relied upon rigid cages to contain pets while traveling. Such cages are often heavy, bulky and difficult to move, and thus are inconvenient for modern-day travelers.

[0003] Many attempts have been made in the past to provide more convenient and collapsible pet carriers which avoid the problems of standard cage-type carriers. However, these prior devices are often characterized by difficulty in use, i.e., significant time or effort is required to set up a carrier for use from a collapsed storage position. For example, U.S. Patent No. 5,277,148 describes a wearable pet enclosure having a base adapted to fit against the body with a collapsible frame and cover. In this instance, the frame is made up of separate flexible frame pieces each connected in a hoop-like fashion to the base. In order to extend the frame for use, it is necessary to first pull each frame piece upwardly and then disconnect an end of each piece which is then reconnected to an opposing coupler. As such, it is necessary to remove the cover in such a car-

rier in order to access the frame.

[0004] Other representative prior art pet carriers are disclosed in U.S. Patents Nos. 6,286,461, 6,021,740, 5,170,745, 4,803,951, 6,446,577, 5,351,646, 6,076,485, 3,156,213, 2,170,379, 3,481,311, D387,508, and Published Application U.S. 2003/0127060.

SUMMARY OF INVENTION

[0005] The present invention overcomes the problems outlined above, and provides a greatly improved collapsible pet carrier. Broadly speaking, a pet carrier in accordance with the invention includes a base having a frame secured thereto and shiftable between a collapsed position proximal to the base and an extended use position. A flexible cover also forms a part of the carrier and is adapted to be disposed over the frame in the extended use position thereof. The frame preferably presents a pair of arcuate sections in both the collapsed and extended frame positions, and the frame is capable of movement from the collapsed to the extended position of its own accord and without any intervention or manual manipulation of the frame, once the frame is unrestrained. During such pop-up self-erection of the frame, the arcuate sections twist and pivot about transverse axes. The frame is preferably

formed of a material having the resilience, flexibility and shape memory characteristics required for such pop-up self-erection, and is advantageously in the form of an endless, unitary length of such material.

[0006] In another aspect of the invention, the overall carrier includes a top which mates with the base when the carrier frame is collapsed in order to cooperatively define a restraining housing for the frame and cover. In this orientation, the carrier presents a narrow profile and can be readily carried. When the carrier is to be used, the top is detached from the base, allowing the frame and cover to self-erect, and the top is inverted. The top is configured to mate with the base in the inverted condition, so that the combined structure creates a rigid bottom for the carrier and avoids possible loss of the top.

BRIEF DESCRIPTION OF DRAWINGS

[0007] Figure 1 is an isometric view of a pop-up pet carrier in accordance with the invention, illustrated in its extended use configuration and with the access door of the carrier partially opened;

[0008] Fig. 2 is an isometric view of the carrier, depicting the side of the cover opposite that shown in Fig. 1;

[0009] Fig. 3 is an exploded view illustrating the base of the car-

rier with the frame extended and prior to connection of the carrier top to the underside of the base;

[0010] Fig. 4 is a fragmentary isometric view illustrating a preferred connection between the pop-up frame and the base, and also the connection between the base and the flexible cover of the carrier;

[0011] Fig. 5 is an elevational view of the carrier in its extended use position, and illustrating the method of collapsing the frame by placing the top above the frame and cover, and pressing downwardly to reconnect the top to the base;

[0012] Fig. 6 is an isometric view illustrating the configuration of the frame in its collapsed and restrained position within the housing formed by the base and top, the latter being illustrated in phantom; and

[0013] Fig. 7 is an isometric view of the carrier in its closed condition.

DETAILED DESCRIPTION

[0014] Turning now to the drawings, a pop-up pet carrier 10 in accordance with the invention broadly includes a base 12, a frame 14 (see Fig. 3) disposed within and operatively connected to the base 12, a flexible cover 16, and a top 18. The carrier 10 is designed, in its extended use position illustrated in Figs. 1-3, to house a pet such as a cat

or dog for transport. A feature of the invention is that the carrier may be closed within a housing defined by the base 12 and top 18 for easy transport, and then may be rapidly and easily opened and extended for use as a pet carrier.

[0015] In more detail, the base 12 includes a main panel 20 having arcuate ends and a pair of spaced apart, lengthwise reinforcing ribs 22, 24 and a peripheral rib 25. The ribs define troughs within the inside of the base to collect animal fluids during use. The panel 20 has an inner surface 20a and a corresponding underside 20b. The base 12 also presents a continuous upstanding sidewall 26 presenting an upper margin 28; the wall 26 is slightly offset relative to panel 20 so as to present a lower lip edge 29. As best seen in Fig. 3, the base 12 is provided with an additional, somewhat L-shaped upstanding inner wall 30 which extends about the majority of the sidewall 26, except at the pet entryway region 32.

[0016] The inner wall 30 supports two frame connector sets 34 (see Fig. 4) disposed on opposite sides of the base 12 generally midway along the length thereof. Each frame connector set 34 includes three upstanding, spaced apart blocks 36, 38, and 40, as well as a pair of downturned

catches 42, 44 respectively located above a corresponding block 36 and 40. It will be observed that the central block 38 of each set has a concave upper surface 46 so as to accommodate frame 12 as will be explained. The blocks 36–38 are supported on the inturned flange 48 (which corresponds with rib 25) of the inner wall 30 as shown.

[0017] The base 12 is preferably formed of a substantially rigid synthetic resin material such as polyethylene, polypropylene or vinyl chloride. Of course, a variety of other materials can be used in the fabrication of base 12. Also, a handle 50 may be attached to base 12 as shown.

[0018] The frame 14 is designed so that it may assume two different positions, namely a collapsed position proximal to and preferably within the confines of base 12, and an expanded or extended use position. Moreover, it is preferred that the frame 14 be a pop-up frame, i.e., once the frame is unrestrained it will pop-up or self-erect from the collapsed to the extended position thereof without any manual manipulation or other intervention.

[0019] To this end, the frame 14 is preferably formed from a unitary, endless segment 52 of resilient, flexible, twistable material having shape memory, such as chrome-silicon music wire, or an appropriate synthetic resin material. In

more detail, the preferred segment 52 includes a pair of opposed connection stretches 54 each coupled to a corresponding connection set 34, as well as a pair of arcuate sections 56 between the stretches 54, with the sections 56 essentially forming the upper end of the carrier 10 when in its extended use position. Referring specifically to Figs. 3 and 6, the two alternate positions of the frame 14 are illustrated. First considering Fig. 6, it will be seen that the arcuate sections 56 are each inboard of the opposed ends of the base 12, in direct opposition to each other. Of course, the stretches 54 (Fig. 4) remain connected to the base 12 as explained previously. During self-erection of the frame and cover, the frame undergoes pivoting of each section 56 about transverse axes until each section is fully erected. As shown in Fig. 6, idealized X and Y axes are shown as indicative of the transverse axes about which the sections 56 pivot. It will be appreciated that in practice the axes need not be orthogonal nor intersecting; rather, the twisting and pivoting of the sections need occur only in a manner to obtain the desired self-erection.

[0020] The cover 16 is preferably secured to the base 12 and remains affixed thereto when the carrier is collapsed or extended. In particular, it will be observed that the upstand-

ing portion of inner wall 30 is equipped with a series of spaced apart, downturned connection clips 58. Moreover, a further series of these clips (not shown) is secured to wall 26 along the inner face thereof and at the region 32, so that the hold down clips 58 extend throughout the entire inner margin of the base 12. The bottom edge of the cover 16 is equipped with a hem 60 defining a continuous slot 62 (Fig. 4). A connection rod 64 is housed within the slot 62. At the region of the respective clips 58, the hem 60 is relieved, thereby exposing portions 64a of the rod. Thus, the clips 58 engage the corresponding portions 64 so as to retain the cover 16 in place and connected to the base 12.

[0021] The preferred cover 16 of Fig. 1 includes an access door 66 in the form of a zippered flap 68 which may be open as shown in Fig. 2. Additionally, an inner, see-through mesh flap 70 is also zippered to the main body of the cover. Hence, the access door 66 may be opened by unzipping both flaps 68 and 70, thereby allowing a pet to enter or leave the extended carrier 10. The flap 68 is provided with a Velcro hook and loop connection strip (not shown) which mates with a corresponding strip 72 so as to hold flap 68 open. In the Fig. 1 embodiment, one side

of the cover 16 has a transparent mesh window 74 selectively covered by a non-transparent flap 76. In this instance the flap 76 is secured to the cover along the upper margin of the flap, and the inner face of the flap has a hook and loop connection strip 78 which mates with a corresponding strip 80 provided on cover 16. Thus, the flap 76 may be unzipped as shown in Fig. 1 and rolled up with interconnection between the strips 78 and 80 to maintain the flap in an opened condition.

[0022] Fig. 2 depicts the end of the cover opposite the access door, this end being provided with a removably covered window 74a similar to window 74. Further, the side depicted in Fig. 2 has a pocket 82 with a closure zipper 83. If desired, the top of cover 16 is equipped with a flexible carry handle 84 which may be sewn or otherwise affixed to the outer surface of the cover. This permits the carrier 10 to be easily transported, even with a pet confined within the carrier.

[0023] The overall carrier 10 preferably includes a substantially rigid top 18 which includes a ribbed main panel 86 with an upstanding marginal sidewall 88 presenting a terminal edge 89. The top 18, like base 12, is advantageously formed of any suitable synthetic resin material. The oppo-

site sides of the sidewall 88 are equipped with a pair of spring latches 90. When the frame 14 is in its collapsed position along with cover 16, the top 18 is secured to base 16 so as to present a convenient housing for the frame and cover. This condition is illustrated in Fig. 7 where it will be seen that the edge 89 of top sidewall 88 is in closing relationship with upper margin 28 of base sidewall 26; the clips 90 releasably hold the top 18 to the base 12 to define the housing. A carry strap 92 may be attached to sidewall 26 as shown for ease of transport.

[0024] When the carrier 10 is to be used, the latches 90 are actuated, permitting separation of the top 18 from base 12. This immediately results in pop-up self-erection of the frame 14 and cover 16, owing to the fact that the frame restraint provided by the top 18 is released. Next, the top is inverted (Fig. 3) and the underside 20b of the base 12 is fitted into the concavity presented by the inverted top. Specifically, the base is positioned within the inverted top so that the terminal edge 89 interfits with the lower lip edge 29 of sidewall 26. Here again, the latches 90 are used to interconnect the inverted top 18 with base 12 so that the combined structure assumes the configuration depicted in Figs. 1 and 2. The doorway 66 can then be

opened along with the window flaps as desired, in order to accommodate a pet.

[0025] When it is desired to collapse the frame and cover, it is only necessary to place top 18 above the latter (Fig. 5) and press downwardly to move the top 18 towards base 12. This causes the frame 14 to progressively move toward the collapsed position thereof under the influence of the restraint presented by the top 18. Ultimately, the top 18 is pressed into mating relationship with the base 12, and the latches 90 are used to reattach the base and top.

[0026] Although not shown, if desired the bottom panel 20 of base 12 may be slightly sloped for drainage, and a drain aperture may be provided. Thus, during long term use of the carrier, animal waste may flow through the aperture and be retained within the inverted top 18. The preferred synthetic resin material making up the base and top allow easy cleanup after such use.